MARINE REVIEW.

VOL. IV. CLEVELAND, OHIO, THURSDAY, DECEMBER 24. 1891. No. 26.

The Waterways Convention.

Lake interests from St. Paul and Minneapolis to Oswego, assembled in convention at Detroit, have asked Congress for a 20-foot channel between Duluth, Chicago and Buffalo; for a survey that will determine the cost of a 20-foot canal over the most advantageous route from the lakes to the Atlantic ocean, and for liberal appropriations in the matter of lights, fog signals and other aids to navigation on the lakes. They have also joined hands with the Hudson river shipping interests, in asking for the improvement of the Hudson to a navigable depth of 25 feet from Coxackie to Troy. This latter feature of the recommendations of the convention was in part due to the fact that the convention had asked for a survey of a canal route that must lead to the Hudson.

To the readers of the REVIEW, who are acquainted with the preliminary work of the past year leading up to this great gathering of commercial interests, the deliberations of the convention with reference to the question of committing itself to any action on an outlet to the seaboard is of most importance. That part of the resolutions calling for a 20-foot channel througout the lakes was a foregone conclusion; it was the great object of the convention, and it is an improvement of immediate necessity, approved by the engineering department of the government and certain to become a reality with the completion of the government works at St. Mary's Falls canal and other places along the route of lake commerce. On the other hand, to sum up the feeling among vessel owners and others most directly interested in lake commerce, there was a doubt as to what would be done with the question of a seaboard outlet. Three elements made up the convention. Northwestern delegates were enthusiastic on the subject of a canal to the Atlantic and they were earnestly supported by a large representaiton from Oswego, whose interest in the subject, it must be admited, is somewhat selfish. The second element was from Buffalo and Chicago, made up of a representation of the lake line boat interests, whose connections with the railways and terminal interests of Buffalo prompted opposition to even a survey on the canal question. This was also a selfish interest, to some extent, although the opposition to the canal question was based on the claim that it would jeopardize the chances attending the 20-foot channel project in the present Congress. The third element in the convention was made up of delegates from Detroit, Cleveland, Milwaukee and other lake ports, having a vital interest in the completion of the 20-foot channel project, on account of the vessel property, mining and other industries which they represented. To this portion of the convention the matter of a seaboard outlet was a problem repuiring the greatest consideration, and they would not object to asking Congress for the appointment of a commission of engineers for the purpose of giving the matter attention. In the committee on resolutions, where the principal work of the convention was outlined, the northwestern enthusiasts on the canal question were met with opposition from Buffalo and Chicago and the discussion was for a time very warm. The districts favoring the canal project were largely in the majority as to representatives, but the conservative portion of the convention held most influence and the request to Congress was modified so as to call for only a survey.

In the resolutions the 20-foot channel project is of first importance. A memorial to Congress, prepared by Hon. George H. Ely of Cleveland, precedes the resolutions. It is a forcible and scholarly paper and was the subject of a great deal of favorable comment. The resolutions are as follows:

RESOLVED, That this convention does hereby respectfully and earnestly request and urge Congress to authorize the immediate commencement and speedy completion of an unobstructed channel not less than twenty feet in depth and of sufficient width through the lakes and their connecting waters between Chicago, Duluth, Superior and Buffalo, and that the secretary of war be authorized to make contracts for the entire work, and a sufficient sum of money be appropriated therefor.

WHEREAS, Every consideration of prosperity in time of peace and protection in time of war demands the construction of a waterway of sufficient capacity to allow a free passage of vessels drawing twenty (20) feet of water through our own territory from the great lakes to the Atlantic ocean, therefore,

RESOLVED, That we further request Congress to authorize the secretary of war to cause to be made surveys, examinations and estimates of cost of the various practicable routes for such waterway, with a view to determining the one which is most advantageous, and that a sufficient sum be appropriated to defray the expense of such surveys and examinations.

RESOLVED, That this convention strongly favors the improvement of the Hudson river to a navigable depth of twenty feet from Coxackie to Troy.

RESOLVED, That we respectfully urge upon Congress the necessity for the most liberal appropriations for the establishment and maintenance of all needed lighthouses, fog signals, buoys and beacons throughout the entire chain of lakes, to the end that added security may be given to life and property.

Resolutions bearing upon the Canal street bridge question at Chicago, and several other matters of a local nature were referred to the committee on legislation. The committee on legislation is made up of the executive officers of the convention and a representative from each of the delegations in attendance. Ex-Senator Palmer, who presided over the convention in a most able manner, is chairman of this committee and will arrange for a hearing with the proper committees in Washington shortly, when about 100 of the delegates appointed for the purpose are expected to attend. Ex-Senator Palmer's numerous duties will not permit of his giving attention to the details connected with preparations for the meeting of the committee in Washington, but Mr. George H. Ely of Cleveland is first vice-president and Mr. Charles H. Keep of Buffalo is secretary. These two gentlemen will undoubtedly use every effort to bring about a big gathering of members of the legislative committee in Washington. The great success of the convention is due to the excellent arrangements made by the Detroit committees.

The big gathering of commercial interests at the Detroit wateways convention showed its appreciation of faithful and efficient service on the part of government officers by extending a vote of thanks to Gen. O. M. Poe and Col. William Ludlow, army engineers.

SUPPLEMENT.

MARINE REVIEW.

LOCATION OF VESSELS—WINTER OF 1891-2.

BUFFALO.

STEAM.

Avery, W. A.
Adams, Tom
America.
Australasia.
Bradley, C. H.
Barnum, W. H.
Bulgaria.
Baldwin, S. C.
Brazil.
Bartlett, E. B.
Boston.
Brown, Fayette
Badger State.
Cylde.
Conestoga.
City of Glasgow.
Clarion.
Cross, Belle P.
Commodore.
China.
Cuba.
Chemung.
Curtis, C. F.
Delaware.
Empire State.
Egyptian.
Egan, W. M.
Fay, J. S.
Fryer, R. L.
Florida.
Gault, J. C.
Griffin.
Gratwick, W. H.
Hopkins, A. L.
Hoyt, Colgate
Harlem.
Hecla.
Hebard, Charles
Hurlbutt, C.
Idaho.
Iosco.
Ionia.
Italia.
Inter-Ocean.
Japan.
Kelley, Fred.
King, George
Livingstone.
Lansing.
Lackawanna.
Lyon, J. B.
La Salle.
Mecosta.
Missoula.
Majestic.
Milwaukee.
Montana.
Monteage.
Northern Light.
Northern Queen.
North Wind.
North Star.
Norwalk.
Nebraska.
Nyack.
Newburgh.
Neosho.
New Orleans.
Owego.
Owen, Ira H.
Owen, John
Owen, J. Emery
Oneida.
Peck, S. E.
Prentice, J. H.
Pringle, J. C.
Parnell, C. S.
Packer, R. A.
Progress.
Palmer, T. W.
Plankinton, J.
Rust, D. W.
Rhodes, R. R.
Roumania.
Russia.
Roby, G. W.
Rochester.
Spinner, F. E.
Seneca.
Sheldon, S. E.
Smith, Ed. No. 1.
Stens, W. H.
Sauber, W. F.
Saginaw Valley.
Samoa.
Schlesinger, F.
Syracuse.
St. Louis
Shrigley, J. H.
Siberia.
St. Lawrence.
Sheriffs, Jim
Tioga.
Tampa.
Tice, E. S.
Toltec.
Topeka.
Vulcan.
Vanderbilt.
Wilhelm, S. S.
Wheeler. F. W.
Williams, George F.
Wilson, D. M.
Wolf, W. H.
Wallula.

SAIL.

Andrews, A. L.
Atmosphere.
Aloha.
Benson, C. B.
Barnes, C. C.
Boody, A.
Brightie.
Beals, E. P.
Brink, Ben.
Barge 102.
Barge 103.
Barge 104.
Barge 105.
Barge 109.
Barge 111.
Barge 115.
Barge 116.
Barge 117.
Cobb, A.
Clement, S.
Cummings, M. J.
Celtic.
Carpenter, A. A.
Chicago Board of Trade.
Dashing Wave.
Davis, G. W.
Elma.
Ely, S. P.
Fassett, T. S.
Galatea.
Godfrey, J.
Grover, A. P.
Golden Age.
Gardner, F. P.
Hutchinson, E. C.
Harrison, Ben.
Holland, N. C.
Hutchison, J. M.
Hattie.
Home, William
Hartford.
Hawgood, H. A.
Harold.
India.
Iron Queen.
Kingfisher.
Knapp, F. M.
Kimball, S. H.
Locke, P. B.
Little Jake.
Marsh, P. S.
Minch, C. P.
Mowatt, James
Miztec.
Manitowoc.
Middlesex.
Moravia.
Mott, J T.
Morey, A. G.
Nicholson, E. A.
Oneonta.
Reindeer.
Rounds, W. H.
Rhodes. D. P.
Reed, Isabel
Richards, J. S.
Saginaw.
Scotia.
Smith, Angus.
Shawnee.
Sage, H. W.
Superior.
Sunshine.
Sweetheart.
Saveland.
Tasmania.
Tailor.
Tokio.
Uranus.
Vance, P.
Wenona.
Wand, G. H.
Webb, H. J.
Whitney.
Woolson, Mary

DETROIT.

STEAM.

Atlantic.
Allegheny.
Blanchard, B. W.
City of Detroit, No. 1.
City of Detroit, No. 2
City of Cleveland.
City of Alpena.
City of Mackinac.
Cole, Darius
Conemaugh.
Colwell, George L.
Duncan, Maggie
Drake, M. M.
Flora.
Fesssenden.
Fisk, James, jr.
Ford, J. C.
Greyhound.
Gazelle.
Hodge, Samuel F.
Hall, John E.
Haze.
Iron Duke.
Iron Chief.
Idlewild.
Josephine
Juno.
Kirby, Frank E.
Lindsay, A. G.
Leland.
Metropolis.
Minneapolis.
Moran, John V.
Mineral Rock.
Marigold.
Nipigon.
Newsboy.
Niko.
Peck, E. M.
Pickands, H. S.
Philadelphia.
Pridgeon, John, jr.
Riverside.
Remora.
Stafford, W. R.
Sachem.
Swallow.
Starke, C. H.
Toledo.
Weston, A.
Warrington.
Whitaker, Byron
Wilds, Alice E.
White Star.

SAIL.

Bolton, Samuel.
Bissell, G. W.
Corsican.
Churchill.
Card, J. F.
Dobbins, D. P.
Doud, Reuben
Dakotah.
Francomb, John A.
Groton.
Gould, E. F.
Hawkins, W. H.
Hanscomb, Belle
Iron City.
Iron State.
Iron King.
Ishpeming.
Irish, S A.
Jewett, John
Mont Blanc.
Monterey.
Marengo.
Martin. Maria
Murray, Grace
Monguagon.
Melbourne.
Monitor.
Nassau.
Onward.
Parker, Thomas L.
Paige, Joseph
Prince Alfred.
Red Wing.
San Diego.
Samana.
Seaton, Leonard
Starling.
Smith & Post.
Senator.
Sweepstakes.
Senator Blood.
Unadilla.
West, N. C.
Watson. S. V. R.
Young America.

LAKE TUGS.

Anderson, Bob.
Baker, F. L.
Balize.
Clark, J. P.
Charlton.
Crusader.
Favorite.
Gladiator.
Lyon, L. L.
Moore, William A.
Miner, J. L.
Oneida.
Sweepstakes.
Swain.
Williams, Kate
Winslow.
Wilcox, O.

CHICAGO.

STEAM.

Alaska.
Arabia.
Albany.
Argonaut.
Aurora.
Avon.
Berrien.
Britanic.
Buffalo.
Butters, Geo. F.
Caledonia.
Canisteo.
Castalia.
Chicago.
Cristy, T. S.
City of Cleveland.
City of Duluth.
City of Paris.
City of Rome.
City of Traverse.
Columbia.
Craig, John
Dahlia.
Davidson, Thos.
Dunbar, Geo.
Durr, May
Eddy, C. A.
Eddy, J. F.
Elffn-Mere.
Escanaba.
Farwell, J. H.
Forbes, Kitty
Foster, Parks
Fountain City.
Germanic.
Gould, Jay
Hadley, G. H.
Holland, R.
Hope, Geo. T.
Hudson.
Iron King.
James, H R.
Jewett, H. J.
Langdon, J. R.
Lehigh.
Manchester.
Mercur, Fred
Minch, Philip
Moore, J. W.
Morley, G. W.
Neshoto.
Northern King.
Northern Wave.
Oades.
Ohio.
Packer, H. C.
Pickands, Jas.
Pope, E. C.
Portage.
Presley, George
Prince, F. H.
Raleigh.
Reid, R. C.
Rhoda Emily.
Richards, Rube
Saranac.
Schoolcraft.
Scranton.
Servia.
Sitka.
Superior.
Susquehanna.
Tacoma.
Tuscarora.
Tuttle, H. A.
Vail, Wm.
Veronica.
Viking.
Weed, Emily P.
Whitney, D. C.
Wilbur, E. P.
Wissahickon.
Wright.
Western Reserve.

SAIL.

Alaska.
Arenac.
Adriatic.
Burnsides.
Bahama.
Burt, John
Carney, R. J.
Crawford, C.
Davis, Minnie
Dunford, F. J.
Edwards, J. R.
Arctic.
Active.
Allegheny.
Bliss, A. T.
Beers, A. M.
Banner, Emma
Bauer, J. C.
Brown, W. H.
Crosthwaite, Wm.
Champion.
Conquest.
Church, Nellie
Collins, M. L.
Challenge.
Earl, Hattie
Emily and Eliza.
Four Brothers.
Guthrie, L May
Cheney.
Ames.
Ashland.
Baltic.
Bradley.
Checotah.
City of Chicago.
Danforth, F. L.
Eddy, N. A.
Ewen, F. D.
Foster, Chas.
Homer.
Keith, Ida
Mitchell, M. B.
Negaunee.
Ogarita.
Parker, B. W.
Rutter, J. H.
Sandusky.
Shaw, John
Stewart, W. W.
Verona.
Wayne.

CLEVELAND.

STEAM.

Alcona.
Briton.
Cambria.
Cumberland.
Constitution (tug)
Cayuga.
Continental.
Colonial.
Chisholm, Wm.
Dahlia.
Devereux, J. H.
Edwards, Wm.
Forest City.
Frontenac.
Green, C. H.
Glidden, J. N.
Grecian.
Gilcher, W. H.
Gowan, A. Y.
Joliet.
Kaliyuga.
Kershaw.
Keystone.
Ketcham. V. H.
Lockwood, J. B.
Mariska.
Maruba.
Marquette.
Matoa.
Masaba.
Marina.
Manola.
Norman.
Olwill.
Onoko.
Olympia.
Pease, E. S.
Pontiac.
Quito.
Roman.
Republic.
Spencer, Geo.
Spokane.
Specular.
Tuttle, H. B.
Tower, C., Jr.
Wawatam.
Wade, J. H.
Wocoken.
Wetmore, W. L.
Yakima.

SAIL.

Alta.
Austin.
Brunette.
Barlum.
Church, H. E.
Cook, Col.
Eliza.
Georger, F. A.
Gilmore, J. E.
Gerlach, E.
Holland, Grace
Ironton.
Johnson, C. H.
Kent, H. A.
Kitchen, J. B.
McGregor, Wm.
Magnetic.
Minch, S.
Morse, F. A.
Masten, J. G.
Martin, John
Our Son
O'Neil, John
Planet.
Pennington, B. L.
Pelican.
Queen City.
Root, H. D.
Richards, H. C.
Rival.
Racine.
Sumatra.
Sigel, Franz
Wesley, G. W.
Williams, E. R.
Wadena.
Wilson, Annabel
Warrington, G. H.
Walton, A.

MILWAUKEE

STEAM.

Almendinger, J. M.
Arcadia.
Arizona.
Business.
Burnham, George
Bond, H. R.
Campbell, Colin
Chipman, Susie
Cyclone.
Cormorant.
Carter, W. J.
Christie, T. S.
Dyer, Geo. H.
Davidson, Thos.
Fitzgerald, R. P.
Flower, R. P.
Grand Traverse.
Hilton.
Hackett, R. J.
Helena.
India.
Johnson, H. J.
Johnson, Andy
Joys.
Markham, G. C.
Marshall, Maggie
Marion.
Macy, S. J.
Maryland.
Manchester.
Manhattan.
Merrimac.
Minnesota.
Massachusetts.
Nahant.
Omaha.
Pueblo.
Pratt, P. P.
Preston.
Pabst, Fred
Rand.
Ralph, P. J.
Rudolph, Wm.
Roanoke.
St. Joseph.
Schroeder, John
Veronica.
Westover.

SAIL.

Gregory, M. A.
Grummond, Grace
Green Bay.
Harrison, C.
Helena.
Itasca.
Jones, J. V.
Lovinda.
Luling, Charles
Madonna.
Morning Star.
Mabee, Dan
Metacomet.
Nirvana.
North Star.
Nelson, O. M.
Neff, S. O.
Narragansett.
Potomac.
Plymouth.
Porter, J. U.
Perry, L. W.
Richards, May
Restless.
Simmons, Z. G.
South Side.
Starke.
Scoville, E.
Simpson, L. A.
Trio.
Thal, S.
Travis, J. A.
Three Bells.
Westcott, G. W.
Wilson, Mabel
Wyman, Charles E.
Wallhalla.

PORT HURON.

STEAM.

Armour.
Arnold, B. W.
Brockway, George E.
Beebe, J.
Benton.
Brady, G. N.
City of Berlin.
City of Concord.
Colorado.
Carperter, O. O.
Cleveland.
Dispatch.
Gogebic.
Groh, M.
Hiawatha.
Howard.
Harley.
Haight, Kittie
Jenks, Ed
Langell, Simon.
Mystic.
Mills, Robt.
Mills, N.
Newaygo.
Osceola.
Pawnee.
Richmond, Dean
Runnells, D. N.
Sprite.
Sawyer, W. H.
Sumner, A.
Stewart, R.
Scott, T. R.
Torrent, N.
Wright, A. J.

SAIL.

Alaska.
Arenac.
Adriatic.
Burnsides.
Bahama.
Burt, John
Carney, R. J.
Crawford, C.
Davis, Minnie
Dunford, F. J.
Edwards, J. R.
Favorite.
Jackson, A.
Lamb, L. L.
Melvina.
Montpelier.
Magnet.
May, Lilly
Nichols, A. P.
Orton, M. E.
Quinby, J. L.
Redfern.
Stewart, W. W.
Skylark.
Senator Blood.
Sonora.
Tyson, E. E.
Tuxbury.
Wissahickon.
Wells, Hattie
Wallbridge.
Yankee.

MARINE CITY.

STEAM.

Abercorn.
Aztec.
Buttironi, Katie
Cottrell, Harry
Cherokee.
Fanchon.
Miami.
Rose, D. F.
Richardson, Walter
Salina.
Smith, Edward.
Sicken, M.
Tempest, No. 1.
Tempest, No. 2.

SAIL.

Albany.
Boscobel.
Buckeye State.
Brake, William
Casey, Lyman
Coyne, E. L.
Chippewa.
Dayton.
Davis, C. H.
Delaware.
Fillmore, J.
Fryer, Robert L.
Jupiter.
Keepsake.
Maize.
Marine City.
Marvin, S.
McVea.
Republic.
Rawson, Jane
Rawson, Levi P.
Richards, Alice.
Shiawassee.
Spademan, Chas.
St. Joseph.
Simes.
Troy.
Zapotec.

SANDUSKY.

STEAM.

Arctic
Brooks, Leroy
City of Sandusky.
City of Dresden
Dessault, D.
Empire.
Groh, M.
Hayes, R. B.
Kunz, D.
Louise
Lowell
Roland
Stone, W. H.
Schuck, R. E.
Schnoor, H. C.
Telegram
Weston, J. M.
Yosemite

SAIL.

Alanson, H. D.
Amaranth.
Clinton, W. R.
Ferguson, D.
Guiding Star.
Icsman, R. B.
Kellogg. A. R.
Lone Star.
Rogers, A. J.
Ryan, C. N.
Roscius.
Watson, S. L.

ASHTABULA.

STEAM.

Corona.
Corsica.
Everett, A.
German.
Saxon.
Sparta.
Havana.
Vienna.
Queen of the West.

SAIL.

Bell, M. C.
Camden.
Teutonia.
Sonsmith, R.
Winslow.
Wallace, D.
Quayle, Thos.

ALPENA.

SAIL.

Lathrop, S. H.
McBrier, A. J.
Westford, (Stmr.)

BAY CTIY.

STEAM.

Burlington.
Davidson, J. P.
Leuty.
Ossifrage.
Lora.

SAIL.

American Giant.
Drake, L. W.

BLACK ROCK.

STEAM.

Gladstone.
Chisholm, H.
Passadena.

DULUTH.

STEAM.

City of London.
Elphicke.
Gilchrist, J. C.
Harper, John
Kirby, S. R.
Mitchell, John
Nicol, John M.
Nimick, Alex.
Thomson, A. D.
Ward, Eber

SAIL.

Bage 118.
Northwest.
Taylor, A. B.

ERIE.

STEAM.

Campbell, Gov.
Fedora.
Grover, M. B.
Hesper.
Juniata.
Lycoming.
Nyanza.

SAIL.

Adams, G. W.
Gifford, F. R.
Goffe, M. R.
Michigan.
Moonlight.
Reddington, H.
White, Jennie
Warner, M. R.
Barge 107.

ESCANABA.

STEAM.

Northerner.
Swain, V.

SAIL.

Helvetia.
Sheldon, T. P.
Page, M. W.
Wall, Charles

GRAND HAVEN.

STEAM.

Boyce, M. H.
City of Milwaukee.
City of Grand Rapids.
Faxton.
Gill.
Otter, Charles
Street.

SAIL.

Behm, L.
Condon.
Howlett, Robert
Loutit, Wm.
McGregor, Mary
Macey, David
Ruby.
Savidge, Hunter

KINGSTON.

STEAM.

Armenia.
Baily, Jessie D.
Calvin, Hiram A.
Chieftain,
Corsican.
Glengarry.
Hero.
Islander.
McDonald, John A.
Maynard.
Maude.
North King.
Pierrepont.
Spartan.
St. Lawrence.
Traveller.
Walker.

SAIL.

Falkner, Annie
Folger, B. W.
Grantham.
Hanlon.
Murton, Ella
Minnedosa.
Singapore.
White Oak.

LORAIN.

SAIL.

Adventure.
Columbian.
Cleveland, H. G.
Kelley, Ed.
Maumee Valley.
Red, White and Blue.
Reid, Conrad
Selkirk.
Sigel, General Franz.
St. Lawrence.
Three Brothers.
Str. Thew, W. P.

MANITOWOC.

STEAM.

Atlanta.
City of Racine.
Indianna.
Menominee.
Virginia.
Genoa, (Schr.)

MARYSVILLE.

STEAM.

Mills, J. E.
Point Abino.

OGDENSBURG.

STEAM.

Averill, W. J.
Denver.
Frost, W. L.
Haskell, W. A.
Marshall, Samuel
McVittie, A.
Oregon.
Rugee, John
Smith, Gov.

SARNIA.

STEAM.

Jessie.
Koal Kabin.
Monarch.
McRea.
Prussia.
Seguin.
Scotia.
United Empire.

SAIL.

Azor.
Amelia, Mary
Aurora.
Blake, E.
Breck, M. L.
Cataract.
Corisand.
Hercules.
Katahdin.
Mary.
Southampton.

ST. CLAIR.

STEAM.

Kalkaska.
Langell Boys.

TOLEDO.

STEAM.

Birckhead, P. H.
Brittian, R. C.
City of Toledo.
Douglas.
Evening Star.
Germania.
Lutts, J. V.
Nashua.
Pastime.
Panther.
Reynolds, S. C.
Sage, Russell
St. Paul.
Torrent, Ida M.

SAIL.

Arthur.
Butman, M.
Brooklyn.
Case, Wm.
Commodore.
Chandler, Zach
Dunn, S. H.
George.
Hannaford, J. H.
Hallaran, H.
Jones, Chester B.
Josephine.
King, C. G.
Kelley, Kate
Leighton, F. C.
Massasoit.
Muir, M. A.
Mitchell, O.
Porter.
Reindeer.
Sparrow, J. E.
Sprague, H. C.
St. Peter.
Shupe, Wm.
Twin Sisters.
Wyandotte.

TONAWANDA.

STEAM.

Buell, F. R.
Turner, A. A.
Maine.
Madden, Lizzie

SAIL.

Atwater, S. T.
Bottsford, R.
Betts, L P.
Buckhout, B. B.
Bissell, H.
Checotah.
Cahoon, T. H.
Donaldson.
Eleanor.
Exile.
Hoag, H. N.
Jeanette.
Jackson, G. K.
McDougall, J. A.
Penokee.
Pendell, D.
Rodgers, Dan
Schuette, John
Severn.
Young, W. A.
Young, C. L.

MISCELLANEOUS.

Str. Atlantis,
Str. Fairbanks, N. K.
Str. Lowell,
Str. Louisiana,
Mt. Clemens.
Port Arthur.
Sheboygan
Racine.
Str. White & Friant,
Schr. Baldwin, A. P.
Schr. Fort, D. G.
Schr. A. B. Norris.
Port Arthur.
Manistique.
Oswego.
Green Bay.

New Work in the Shipyards.

It was shown by the statement in last week's REVIEW of vessels under contract in the different shipyards around the lakes that all of the iron plants are well supplied with work. The only iron concerns that might be expected to contract for new work to be ready for the opening of navigation are the Craig Ship Building Company of Toledo and possibly F. W. Wheeler & Co. of West Bay City. In the wooden yards more boats are talked of and three or four will probably be added to the lists within a couple of weeks. R. W. Lynn of Gibralter Mich., says he will very probably begin work about Jan.1 on a steamer of 175 feet keel, and the Jenks Ship Building Company, of Port Huron, is preparing for the construction of a steamboat when the work of rebuilding the steamer E. H. Jenks is out of the way.

The iron boat begun by the Craig Ship Building Company of Toledo will be a steamer, 200 feet over all, 40 feet beam and 14 feet moulded depth. She is designed with single deck and light draught for the lumber trade between the head of Lake Superior and Tonawanda and will be owned by Michigan parties. The engine will be fore and aft compound,20 and 40 by 36 inches, and the steamer will cost complete about $100,000.

At the yard of the Union Dry Dock Company, Buffalo, the Bath & Hammondsport Railway Company of Hammondsport N. Y. is having built a steel boat for passenger service on Keuka lake that will cost $55,000 and is to make 22 miles an hour. She will be 150 feet over all, 25 feet beam and 7 feet depth of hold.

Curtis & Brainard's steamer at Marine City, upon which work is well under way, is 257 feet over all, 41⅔ feet beam and 21½ feet at the shoalest place in the hold. This steamer will be diagonally strapped outside and will have steel arches 18x⅝ inches inside, running nearly the full length of the boat, with seven strakes of main keelson 14x14 and 12x14 inches. Her engines and boilers are being built by the Phœnix Iron Works of Port Huron. The engines are fore and aft compound 27 and 54 x42 inches, and the boilers, two of them will be 9½x14 feet. In addition to two other smaller wooden boats a steamer and a consort for the lumber trade, building at Marine City by the Mills Transportation Company, it is expected that a large steamer will be put down shortly at the Morley yard.

At the yard of the Cleveland Ship Building Company the steel steamer Spokane of the Wilson Line will be lengthened 48 feet, and the Onoko will get new boilers, Scotch type, 12x12½ feet.

A contract for a passenger boat has been entered into between the Grand Haven Ship Building Company and J. H. Webb. The boat will be 112 feet over all, 20 feet beam and 9 feet deep. Her engines will be compound, cylinders 20 and 22 inches, and will be built by H. Bloecker of Grand Haven. The boiler, to be 7½x14 feet, will be built by Johnston Bros. The Grand Haven Company has just launched a tug for Thompson Smith's Sons of Duncan City and has a large amount of repair work on hand.

The light-house construction steamer Amaranth, launched Friday from the yard of the Cleveland Ship Building Company, is 160 feet long, 28 feet beam and 14 feet deep, and will be supplied with compound engines. Although considerable delay attending preliminary arrangements for this vessel, she was floated on time. The Amaranth is designed for light-house construction service in the Ninth and Eleventh light-house districts, under the direction of Col. William Ludlow.

At Milwaukee the steamer Arizona and consort Plymouth will both receive repairs about equal to a rebuild. The Arizona will be double decked. The steamer Rube Richards and consort May Richards, also wintering on Lake Michigan will receive repairs costing about $6,000.

Saving of Over Six Times the Cost of Improvements.

A feature of the Detroit deep waterways conventions was the important data brought out in the pamphlet prepared by W. A. Livingston of Detroit and entitled "The Twenty Foot Channel." In this pamphlet Mr. Livingston says: "The ton-mileage of the lake marine for 1890 was 18,849,681,384 ton miles. The average rate of freight received by the railroads of the United States per ton mile for the year ending June 30, 1890, according to the report of the interstate commerce commission to be issued shortly, was 9.41 mills. At this rate, the transportation by rail of lake cargoes would have cost $177,375,502.

Freight rates on the great lakes during 1890, varied from 3.5 mills per ton mile to 0.3 mills per ton, the former rate being received on certain high class package freight, and the latter being the rate on coal over a certain route. The writer has at hand statements of the freight earnings of several typical vessels engaged in the "gross freight" trade, whose average earnings for the season of 1890 vary from 0.8 mills to 1.0 mill per ton-mile; this rate including such terminal charges as unloading iron ore. The great bulk of the "gross freights" were carried at less than one mill per ton-mile, and it is probable that the average rate on all freights was about 1.1 mills per ton-mile. Assuming however, that it was as high as 1.2 mills, the cost of the total water transportation was $22,619,617.66, or a saving of $154,-755,884 over the cost of transporting the same freight by rail. From official figures given in the annual reports of the Saint Mary's Falls canal, it is shown that the saving by water transportion over rail of the traffic through this canal was $46,138,512 in 1889, and $55,234,648 in 1890, or a total saving of $101,373,-160 in two years.

The total expenditures to Jan. 1, 1891, on the Saint Mary's river (including new lock) were $4,170,046.28. It is thus seen that the saving effected by this water-way in two years, paid 2,400 per cent. on the total cost to Jan. 1, 1891, and a large portion of these expenditures, such as those on the Hay lake channel and the new lock in the canal, are for improvements not yet available for shipping. The total cost of all the river and harbor improvements on the lakes to date has been about $29,000,000. The saving in one year of $177,375,502, as shown above in the cost of transportation, is over six times the total expenditure for improvements on the lakes. Or again, the total expenditure by the United States for harbor and river improvements in all parts of the country from August 1, 1790, to March 3, 1887, was $157,962,762. It is thus seen that the saving effected by the lake marine in 1890, was $19,412,740 in excess of the cost of all the river and harbor improvements to March 3, 1887.

Were the railroads of the United States obliged to do the work of the lake marine within the season of navigation (235 days) it would take 42 per cent. of the entire railway freight equipment to do it.

Cleveland Matters.

The steamer Olympia of the Wilson Line, Capt. Sheppard, got 12 cents on wheat from Port Arthur on her last trip of the season. If was the highest rate paid on grain since 1873.

On Dec. 2, a date when in most years navigation is entirely at an end, Capt. Cummings of the steamer Caledonia left Duluth for Buffalo with a cargo of grain. He delivered the cargo at Buffalo and his boat is now in Chicago having taken up a cargo of coal. No fall fever about this kind of work.

Mr. H. M. Hanna's auxiliary steel yacht, launched to-day (Thursday) from the yard of the Globe Iron Works Company, is called the Comanche. This boat, built at a cost of about $100,000, will rank among the finest pleasure craft of the country. She was built with a view to comfort, having state room accommodations that would rival some of the ordinary passenger steamers, and is fitted in every way for salt water cruising.

Send 75 cents to the MARINE REVIEW for a binder that will hold 52 numbers.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St. Cleveland, O.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company	$100 00	$.....	$ 80 00
Champion Iron Company	25 00	.....	75 00
Chandler Iron Company	25 00	.....	.....
Jackson Iron Company	25 00	.....	105 00
Lake Superior Iron Company	25 00	.....	.....
Minnesota Iron Company	100 00	.....	81 00
Pittsburg Lake Angeline Iron Co	25 00	.....	145 00
Republic Iron Company	25 00	24 00	25 50
Ashland	25 00	.....	.....
Section Thirty-three	25 00	5 00	.....
Brotherton	25 00	2 00	.....

Holders of Chandler iron stock may expect a dividend of $1 a share in a few days, but as far as can be learned none of the other companies contemplate any division of profits with the new year. Neither is it known whether the Chandler company intends to continue dividends from its surplus or simply pay the single dollar. Secretary Pickands, of Chicago, says in a letter to one of the stockolders that "although the directors have taken no definite action, it is very probable that a dividend of $1 a share will be paid about Jan. 1." A meeting of the Lake Superior Iron Company was held in Boston Tuesday for the purpose of increasing its capital stock, on account of the contract for two more steel steamers, upon which work has already been started in Cleveland. The meeting was not of importance, as its actions were little more than a ratification for plans already outlined by the directors. Some time ago the Lake Superior management intended to arrange for the control of docks at Lake Erie ports for the handling and storage of ore, after the method adopted by the Minnesota and other companies, but this plan has been abandoned, largely for the reason that the purchasers of ore are better satisfied when dictating how it shall be shipped.

Messrs. M. A. Bradley and Henry D. Coffinberry, who represent extensive lake shipping interests in Cleveland, were in in Duluth last week and visited some of the new properties of the Vermillion range. They have been engaged for some time past in investigation regarding new mines on both the Vermillion and Mesaba range and may become interested in them. Mr. Bradley says the owners of the Mesaba range properties are predicting a boom for the range equal to that attending the opening of the Gogebic. The Duluth & Winnipeg Railway will build a branch to the range immediately and a contract for construction of the new Duluth, Mesaba & Northern road was let last week. A town is about to be built near the Cincinnati and Biwabik mines, two of the most promising on the range, and options for exploring purposes are held at prices ranging from $5,000 to $25,000. Samples show high grade ore in all cases but there is still a great deal of doubt about its general cleanliness.

Escanaba ore shipments for the season foot up, according to a report from Mr. H. A. Barr, superintendent of the docks, 3,052,813 tons and were divided among the different mines as follows: Marquette range—Angeline, 59,643; Barnum, 10,651; Buffalo, 333,726; Cambria, 24,793; Champion, 3,747; Cleveland, 104,963; Cliffs Shaft, 109,990; Cheshire, 7,106; E. New York, 36,001; Foster, 3,072; Grand Rapids, 3,032; Jackson, 73,085; Lillie, 4,271; Lucy, 12,664; Marquette, 3,561; Michigamme, 8,584; Negaunee, 30,348; Prout, 4,412; Salisbury, 69,234; Superior, 195,369; Volunteer, 35,321; Winthrop, 19,924. Menominee range—Aragon, 62,700; Chapin, 428,504; Commonwealth, 133,180; Cyclops, 55,769: Dunn, 161,932; Great Western 60,936; Florence, 48,807; Half & Half, 67; Hollister, 1,057; Hamilton. 12,553; Hemlock, 11,610; Millie, 5,907; Iron River, 6,169; Mansfield, 25,754; Monitor, 26,226; Mastodon, 45,370; Nanaimo, 11,472; Norway, 4,090; Paint River, 38,146; Pewabic, 64,507; Perkins, 110; Shafer, 70,470; Sheridan, 6,150; Vulcan, 134,632; Walpole, 1,873; Youngstown, 3,705; Lincoln, 1,814. Gogebic range—Brotherton, 33,614; Cary, 9,442; Norrie, 337,608; Pabst, 41,507; Newport, 1,526.

By an exchange of stocks the Chicago & Northwestern Railway Company has acquired control of the Milwaukee, Lake Shore & Western. This gives the Vanderbilts about 750 miles of additional railway in Wisconsin and the upper peninsula of Michigan. Although relations between the consolidated roads have been very close for a long time past, announcements of this kind can hardly be agreeable to the mining interests of the Lake Superior district. It is only a few months ago that the northwestern took up the new Schlesinger road and the St Paul system had previously acquired the Milwaukee & Northern. The hope of reduced rail rates between mines and shipping ports is evidently drifting away from the mine owners with each succeeding winter.

Corrigan Ives & Co., of Cleveland, holding a mortgage against the property of the Republic Reduction Company, bought the plant at sheriff's sale in Republic last week. The reduction company carried on operations for a time under a lease and in connection with certain rights from the Republic mining company. Mr. James Corrigan says the plant will be operated next year if prices in the iron market warrant it.

Shipments from the Norrie mine for 1891, foot up 765,136 tons and from the Pabst 130,226, making a total output for the Metropolitan Iron and Land Company of 885,362 tons, against 1,078,788 tons in 1890. The News Record of Ironwood this week presents a drawing showing a cross section of the formation at the west end of the Norrie.

Owners of the best iron properties on the Atikokan range, in the vicinity of Port Arthur, Ont., are said to have given to the representatives of Belgian capitalists, who have been at Port Arthur for some time past, an option for a lease of their lands. The foreigners have until November, 1892, to test the properties.

Leading in Iron Ships.

According to an advance synopsis of the report of William W. Bates, commissioner of navigation, the documented tonnage on the northern lakes June 30, 1891, was 1,154,870 tons. The entire documented tonnage of the country is 4,648,759 tons, represented by 23,889 vessels. Iron vessels measuring 57,989 tons were built on the lakes during the year. This is more than half of the iron vessels built in the entire country. Atlantic coast shipyards built 46,265 tons of iron and there was built in all parts of the country 105,618 tons.

The following table shows the tonnage, apportioned in respect to the several grand divisions of the country:

	1888		1889		1890		1891	
Grand divisions	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons
Atl'c & Gulf Coasts	604	83,168.43	657	93,912.24	663	156.755.99	944	218,392.46
Pacific coast	104	21,956.43	112	17,939.43	93	12,334.92	122	19,069.84
Northern lakes	222	101,102.87	225	107,080.30	191	108,525.87	204	111,856.45
Western rivers	84	11,859.15	83	12,202.36	104	16,505.98	114	19,983.54
Total	1,014	218,086.88	1,088	231,134.33	1,051	294,122.76	1,384	369,302.29

The documented iron tonnage on the lakes is 181,724 tons and on the seacoast 554,963 tons. The entire documented iron tonnage, including that of the Western rivers, is 741,598.24 tons. The documented tonnage on the northern lakes June 30, 1891, was 1,154,870 tons; on the Western rivers, 308,345 tons; on the Pacific coast, 440,858 tons, and on the Atlantic and Gulf coasts, 2,780,683 tons.

Collection of Brains and Energy.

In many respects the Detroit deep waterways convention was a remarkable gathering. Business methods were combined with intelligence in the deliberations, and ex-Senator Palmer's keen regard for humor was the cause of an occasional bright outcropping in that line from the floor of the convention. While resolutions of all kinds were falling thick and fast upon the legislative committee, to be cast aside in view of the main aims of the convention, a delegate, gray bearded and otherwise venerable in appearance, secured the floor and read the following:

Resolved, That this convention most heartily approves the action of our government in aiding by loans of its credit the Pacific railways, at the period of the commencement of the work, when there was an apparent great necessity for that aid. And be it further

Resolved, That the time has now arrived when the sums of money so loaned, and interest, amounting to $112,000,000, should be collected as soon as possible and devoted by the government to the great waterways of the country.

The Continental Iron Works, Brooklyn, N. Y., recently received an order for eight extra large corrugated furnaces for J. T. Ryerson & Sons, through Messrs Fraser & Chalmers of Chicago. They are to go in the new Masonic temple erected in that city.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 210 So. Water Street, CHICAGO, Ill., Dec. 24.

The deep waterways convention at Detroit last week may prove of vast advantage to vesselmen on the great lakes or it may be very disastrous. If Congress accepts the voice of that convention as the voice of the $62,000,000 invested in floating property on the lakes, the convention will not be a blessing. It is not for the best interests of the lake marine that all efforts should be concentrated for a 20-foot channel, and all local improvements neglected. Important as the 20-foot channel is, everything else should not give way to it. Yet that spirit was strong in the convention. It is true that the convention was called to consider the 20-foot channel and the local questions were barred, yet they were not barred by many speakers. At nearly every port on the great lakes appropriations are now imperatively demanded. Are all of these ports to go without government aid, because a 20-foot channel is desirable? It would be better to let that channel wait, if Congress will not do all. Still better would be to let both general and local measures go before Congress without comparison or prejudice to one another. To one who has studied the actual movement of grain on the Chicago board of trade for years, much of the talk about a seaboard outlet was nonsense. The entire commerce of the country must be revolutionized before the canal could be generally used for through shipments, if constructed. As for national defense that argument was a very feeble one. One charge of dynamite would render the locks useless for weeks. Action in this matter was forced by some determined enthusiasts from the northwest, backed by the interested efforts of Oswego. As a whole the convention was, however, an undoubted success. If it is to be the meams of securing appropriation for a 20-foot channel between the great lakes, without prejudice to local improvements, it will fully have repaid the generosity of the people of Detroit.

The members of the Lake Line Agents Association will make an inspection trip over both branches of the Chicago river next week and see where the most needed improvements are required. What the association will do after the inspection remains to be seen. The association, although less than a year old, has made an enviable record for aggressiveness in the way of river improvements. It has fought through to the United States courts the famous Canal street bridge case, and inaugarated the case against the Ft. Wayne railroad bridge,which now bids fair to exceed in importance the Canal street bridge case. The line agents have acted on the principle of conciliation with the great public using the bridges, and of education in showing the importance of the marine interest of Chicago. I am told that the association will be reorganized on a somewhat broader basis before the opening of navigation next summer.

HOMER J. CARR.

[It might be well to explain in connection with the general trend of argument in the above that the correspondent Mr. Carr, was one of the Illinois delegates to the waterways convention, who sought to have the convention resolve in favor of Chicago harbor improvements.—ED.]

Steamboat Earnings---Milwaukee Matters.

Special Correspondence to the MARINE REVIEW.

MILWAUKEE, Wis., Dec. 24.—Owners of steam vessels at this port are nearly through with the task of striking balances on the season's work of their property. Inquiry among them develops the fact that the net earnings of the boats engaged in the lumber and wood trade fall anywhere from 25 to 30 per cent. short of the season of 1890, while the earnings of grain, iron ore and coal carriers are fully 50 per cent. below those of last season. All acknowledge that the outcome is much better than they had been led to expect at the opening of this season.

As an outcome of the grain blockade at Buffalo, suit has been instituted by the Wolf & Davidson Steamship Company against the St. Paul, Minneapolis & Sault Ste. Marie Railway Company to recover in the neighborhood of $4,000 for demurrage and incidental expenses incurred through delay in the delivery of grain cargoes of the steamers Fred Pabst and Thomas Davidson. The grain was shipped from Gladstone to Buffalo on a through rate to the seaboard made by the railway company, and consigned to elevators at the last named port which were unable to handle it promptly when the steamers arrived. Com. Wolf preferred proceeding against the railway company to attaching the grain in the elevator at Buffalo, and has placed an embargo upon a sum of money remaining in the hands of agents of the railway people here, which amounts to considerably more than the steamship company's claim.

Preliminary steps have been taken for the incorporation of a transit company to run a line of steamers from Gladstone to Buffalo in connection with the St. Paul, Minneapolis & Sault Ste. Marie Railway. It is understood that satisfactory overtures have been made to Capt. Charles E. Moody, of the steamer F. & P. M., No. 5, to take command of the pioneer steamer of the new line, and that he has tendered his resignation to the Flint & Pere Marquette Railway management, to take effect on January 1. Capt. Moody stands so well with the latter people, however, he may be induced to remain in their employ.

The completion of a line of railway to Kewaunee,having through connections with St. Paul and Minneapolis has led to a decision on the part of the Delaware & LackawannaRailwayCompany which now has control of the Flint & Pere Marquette Railway and its connections, to arrange for running a steamer in the package freight trade between that port and Manistee during the winter months. It is given out that the Lake Michigan & Lake Superior Transportation Company's steamer City of Traverse has been chartered for the work.

Com. Wolf has already made appointments of captains for the Wolf & Davidson Steamship Company's fleet for 1892. He has done so thus early in order to be spared the annoyance of a flood of applications during the winter months, when he desires to enjoy a season of rest. The appointments are as follows: steamer Fred Pabst, Lewis Young; steamer William H. Wolf, William Lund; steamer Thomas Davidson, Jere Coleman; steamer George H. Dyer, William Jamieson. Up to the season just closed, during which he served as first mate of the steamer Topeka, "Parson" Jamieson's,lake experience had been confined to handling "wind jammers," but he is now thoroughly prepared for the change, and no doubt will give as good an account of himself while handling the bells as he did while manipulating canvas.

Between forty and fifty members attended the last meeting of the E. M. B. A., including a number of visiting captains. Whale Club members are beginning to resort to their comfortable quarters in the Marine block in large numbers daily. The exchange of experiences during the stormy period which marked the closing weeks of the past season would make a volume of goodly size and afford interesting reading for such landlubbers as are inclined to associate only pleasant romance with travel on the great lakes.

No Rebate on Ogdensburg Grain.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., Dec. 24.—The Montreal Transportation Company here has been officially informed that the government will not allow a rebate of tolls on grain stored at Ogdensburg. The people of Kingston feel easier.

Perry Burns, of this city, has an interest in a large excursion steamer now being built at Buffalo to cost $15,000. She will carry 1,200 passengers run 17 miles an hour and will run between Buffalo and Grand Island.

The new steel tug being built at Collinsby by the rafting company, to be used for towing and wrecking purposes, will be ready tor service in the spring. She will cost over $30,000. The tug Active, owned by the Montreal Transportation Company, will be rebuilt this winter at a cost of $16,000.

The government has decided to continue keeping a light in the city hall dome, notwithstanding that range lights will be erected in the harbor in the spring. Next season the harbor will be well lighted.

The probabilities are that a very large cut of timber will be made this winter, but owing to absence of snow, work will be begun unusually late. It is stated that McLachlan Bros., will make a larger cut than any other firm in North America. Millions of feet will be brought to the streams. Last winter the cut was very small, which no doubt accounts for the great preparations now going on.

Toledo's Coal and Ore Trade.

Special Correspondence to the MARINE REVIEW.

TOLEDO, O., Dec. 17—Following is a statement of the coal (soft) shipped from this port by lake and the iron ore received:

Coal—Columbus, Hocking Valley & Toledo, 650,000 tons; Toledo & Ohio Central, 263,470; Wheeling & Lake Erie, (Ironville), 158,000; total 1,071,470 tons.

Iron ore—Columbus, Hocking Valley & Toledo, 83,000 tons; Toledo & Ohio Centrol, 111,245; Wheeling & Lake Erie, (Ironville) 12,000; total 206,245 tons.

Iron ore on hand, Dec. 15—Columbus, Hocking Valley & Toledo 52,000 tons; Toledo & Ohio Central 70,647; Wheeling & Lake Erie, (Ironville, 700; total 123,347 tons.

Lumber receipts by the lake for the season foot up 177,820,000 feet, and the anthracite coal receipts 83, 910 net tons.

Grain shipments by lake aggregate 19,427,259 bushels, of which 17,702,884 bushels was coastwise and 1,724.375 bushels foreign. These shipments were divided as follows,

	Coastwise,	Foreign,
Corn, bushels.....	2,835,246	160,064
Wheat, "	13,905,128	907,526
Rye, "	950,010	656,785
Oats, "	12,500	.....
Totals,.....	17,702 884	1,724,375

Some callers at the MARINE REVIEW office this week: C. E. Kremer, Chicago; C. H. Weeks, Bay City; Stanley B. Smith, Detroit; S. B. Hubbard, Sandusky.

Prospects for Lake Freights.

Dealers in iron ore have had some inquiry from furnacemen during the past week for prices, but it is evident that the pig iron market, notwithstanding the strong feeling as to its future, does not as yet warrant purchases of ore at advanced prices, and the ore dealers answer that they are not ready to give figures on next season's business. The ore companies are undoubtedly making preparation that will mean a production of 10,000,000 tons of ore in the Lake Superior region during the coming year if the market will warrant it. Dock facilities on Lake Erie and at Chicago will care for 10,000,000 or even 11,000,000 tons if the business in iron demands it.

Duluth is expected to have in store at the opening of navigation about 19,000,000 bushels of grain, and rates for winter storage and delivery in the spring indicate accordingly, the strong feeling with regard to next season's business. Chicago grain shippers are offering 5½ cents on wheat and are now loading a few boats at that figure, but most owners are holding off for a higher rate. At Duluth the steamers Gilchrist, John Mitchell, Harper and barge Northwest have been loaded on a 6 cent rate for wheat and the steamer Nimick on a 6½ cent rate for flax seed. The steamer Elphicke has a cargo of wheat at a 7 cent freight rate, taken on with the expectation of making delivery before navigation closed. The S. R. Kirby and City of London also wintering at Duluth are held at 8 cents.

New Circuit Judges.

President Harrison has appointed the new circuit judges who will have final jurisdiction in admiralty cases. Vessel owners of the lakes were very much interested in these appointments, for the reason that two of them, at least, the judges for the Cincinnati and Chicago circuits, will after July 1 next pass finally on nearly all cases arising from accidents on the lakes. The appointments for these places are Judge Taft in the Cincinnati circuit and Judge Woods for Chicago. It is understood, of course, that the new circuit courts made up by these appointments will consist of the present circuit judge of the district with the new judge and a district judge, any two of these being empowered to pass upon all cases coming before the court. Judge Taft is a son of the late Alfonso Taft, attorney general during the administration of President Hayes. He is only thirty-three years of age but his ability has already gained for him a national reputation. Judge Woods is at present one of the United States district judges of Indiana. Democratic newspapers throughout the country are assailing him on account of his decisions in what are termed the "Indiana blocks of five cases," but there is no doubt that his appointment will be confirmed by the United States Senate.

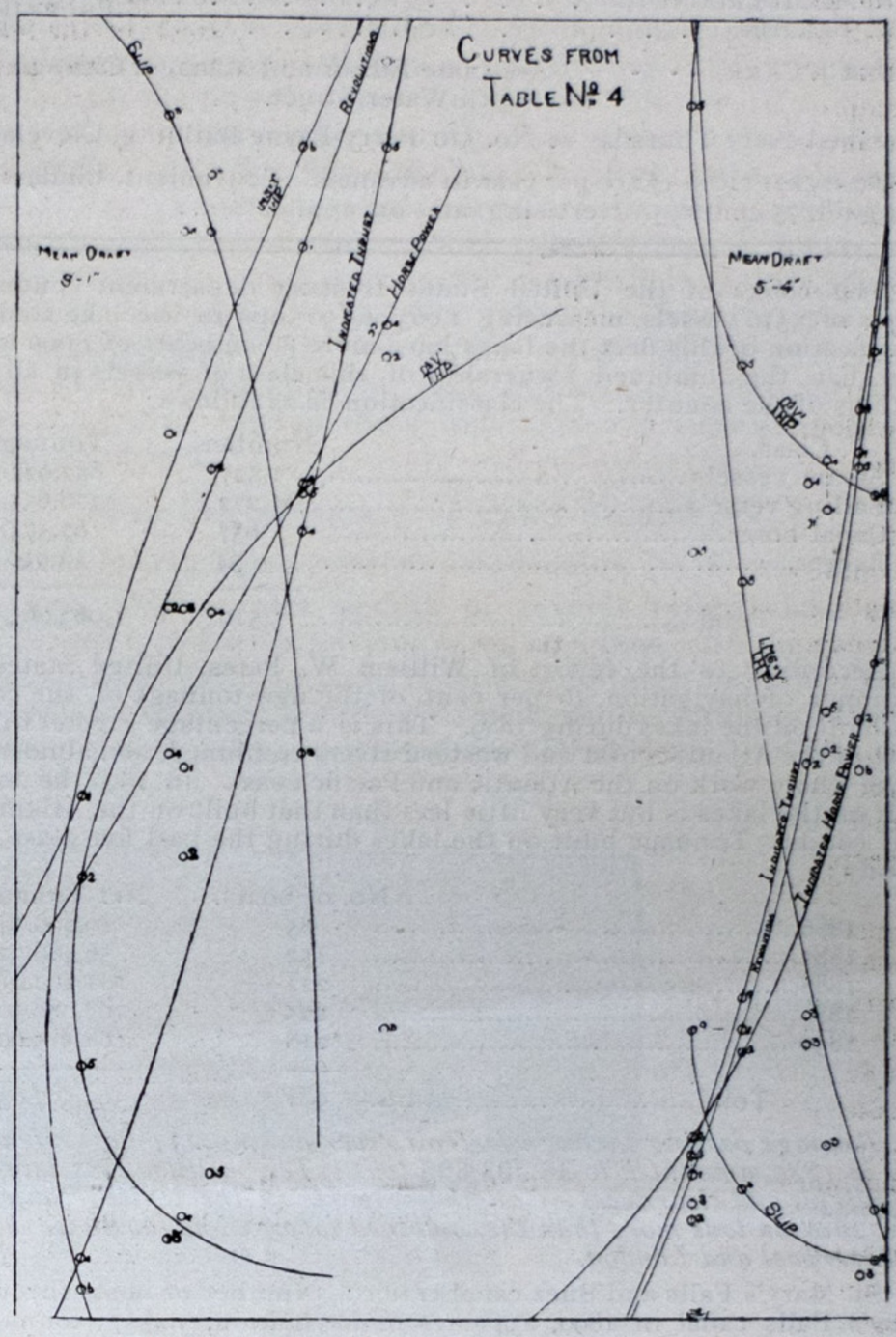
All the judges have been of greater or less prominence professionally, and the fact that two of the six appointed are democrats shows that President Harrison does not consider the appointments of federal judgeships as political in their nature. It is to be hoped that this precedent will be followed in future appointments. Judge Blodgett of the United States district court, Chicago, who has heard a great many lake cases during his long service on the bench now talks of resigning and another judgeship appointment will fall to President Harrison. Judge Blodgett would undoubtedly have been among the circuit judges just appointed but for his age. He is considering the advisability of accepting the presidency of a big life insurance association now being organized in Illinois.

A recent order given to Samson Fox & Co., Leeds, England, embraces 204 corrugated furnaces, to be used in the two new Cunard steamers, to be constructed at Fairfield. The number indicates the immense horse power to be used on these vessels. The Continental Iron Works of Brooklyn, N. Y., is the sole manufacturer of corrugated furnaces in the United States.

Report of Experimental Trip,

MADE UPON SCREW STEAMER E. P. WILBUR TO THE BUILDERS, THE GLOBE IRON WORKS COMPANY, CLEVELAND, O.,

[BY GEO. C. SHEPARD.]



13.46 14.04 14.33 14.97 Miles per hour. 12.66 13 13.58 13.62
14.15 15.54 13.46 13.81

As interesting and fully as important as the indicated horse power is the indicated water consumption, computed from the same diagram. The ratio constant x terminal : mean effective pressure after being corrected for clearance and compression is an expression for the efficiency of that cylinder in terms of pounds of water used per horse power per hour. The mean effective pressure used in the calculations is the aggregate effect of the steam reduced to piston of the cylinder we are at work upon, and to facilitate computation, we used Thompson's Table of Constants. The particulars for indicated water consumption are to be found in the following table V.

TABLE 5. PARTICULARS OF INDICATED WATER CONSUMPTION.

No.	Boiler Pressure.	Rev. per Min.	I. H. P,	Aggregate M.E.P. Reduced to			Terminal on			Indicated Water Consumption.		
				H.P.	M.P.	L.P.	H.P.	M.P.	L.P.	H.P.	M.P.	L.P.
1	154	80.5	1,357.4	157.1	70.7	27.3	95.9	32.3	9.9	18.2	14.6	12.7
2	145	83.5	1,561.	198.4	78.1	30.2	103.1	35.5	10.8	15.4	14.2	12.2
3	142	78.	1,209.7	165.2	65.2	25.1	89.1	29.5	8.7	15.4	13.6	11.7
4	130	76.7	1,115.7	155.4	61.	23.6	80.3	29.1	8.	14.9	14.4	11.4
5	133	77.	1,137.9	157.4	61.9	23.9	84.3	27.7	8.4	15.1	12.9	11.8
7	135	82.5	1,359.	175.3	69.	26.7	97.1	32.7	9.5	16.3	14.9	12.3
8	140	82.5	1,427.7	184.3	72.5	28.	97.9	33.1	10.1	15.9	14.48	12.5
9	135	80.6	1,310.7	173.3	68.2	26.4	91.5	31.1	9.1	15.1	14.5	12.
11	120	73.	1,011.7	147.7	58.	22.1	76.3	28.3	7.4	14.7	13.5	11.4
12	120	70.5	947.	144.5	56.9	22.	73.1	25.9	7.7	14.5	14.1	11.7
13	150	78.5	1,324.2	180.1	70.9	27.4	94.7	32.3	9.	14.8	14.1	11.1
14	142	76.5	1,243.3	173.	68.1	26.3	87.5	30.3	8.5	14.3	13.7	11.8
15	155	78.	1,354.1	184.9	72.7	28.1	97.9	33.1	9.2	14.9	13.6	11.
16	155	79.	1,424.3	192.	75.5	29.2	97.5	33.5	9.6	14.2	13.1	11.1
17	155	78.7	1,421.9	191.8	75.5	29.2	95.1	32.7	9.2	14.	12.7	10.6
18	150	80.	1,498.2	199.	78.5	30.3	99.5	35.9	10.4	14.6	14.4	11.9
19	140	79.5	1,385.1	185.6	73.	28.2	94.7	33.5	9.5	15.1	14.5	11.7
20	150	81.	1,521.	199.7	78.6	30.4	102.7	37.1	10.7	15.3	14.3	12.5
21	145	76.	1,196.8	167.7	66.	25.5	84.3	30.7	8.6	14.2	14.	11.3
22	153	83.	1,600.1	204.9	80.7	31.2	109.1	39.5	11.6	16.4	15.8	12.7

[TO BE CONTINUED.]

HOLIDAY RATES.—The Nickel Plate makes one fare for the round trip, Dec. 23d to Jan. 1, inclusive, on account of holidays. Returning limit to June 5, 1892.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }

HOMER J. CARR, - - - Associate Editor and Manager Chicago Office, 210 South Water Street.

Published every Thursday at No. 510 Perry-Payne Building, Cleveland, O.

SUBSCRIPTION—$2.00 per year in advance. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels	1,272	328,655.96
Canal boats	657	67,574.90
Barges	54	13,910.09
Total	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent. of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886	85	20,400.54
1887	152	56,488.32
1888	222	101,102.87
1889	225	107,080.30
1890	218	108,515.00
Total	902	393,597.03

Tonnage passing through Detroit river during 234 days of navigation in 1889, amounted to **36,203,606** *tons. Ten million tons more than the entries and clearances of all the seaports in the United States, and three million tons more than the combined foreign and coastwise shipping of Liverpool and London.*

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Entered at Cleveland Post Office as Second-class Mail Matter.

WE printed last week a communication from Hon. William Smith, deputy minister of marine of Canada, on the subject of the wrecking laws of the Dominion. One important point of Canadian law made plain in the communication is that bearing upon cases where life or property is in danger. In all such cases Canadian law will admit a foreign vessel of any kind rendering assistance. Referring to the case of two vessels in distress during a heavy storm off Goderich, Ont., several weeks ago, the deputy minister says there was no need of the local customs officer telegraphing to Ottawa for instructions as to whether he should hire an American tug to render assistance. It was enough for him to know that the vessels and crews were in distress and a Canadian tug suitable for the service could not be secured. The law would bear him out in hiring the American tug or giving her permission to go to the distressed vessels. In argument along this line the Hon. Mr. Smith objects in a very fair manner, on the part of Canada, to severe criticism in a previous issue of the REVIEW of the wrecking laws of both the United States and Canada as they are now enforced. The fact remains, however, that the government officer at Goderich did telegraph to Ottawa before permitting an American tug to go to the assistance of two vessels laboring in a heavy sea, in immediate danger of going down with their crews before communication could be had with authorities many miles from the scene of the accident. This is not saying that an American officer might not follow the same course under similar circumstances. It is the zeal on both sides to enforce these laws with a spirit of antagonism, on account of several bad features in them, that has brought so much ill feeling where none should exist. Canadian and American shipping interests on the lakes find little cause for disagreement except in this matter of wrecking laws. An interchange of commerce already large is increasing each year and in many places along the Detroit, St. Clair and St. Mary's river the relations between citizens of the two countries are alike to that of one people. Reciprocity in wrecking will be one of the features of the proposed conference between representatives of the two countries on the whole subject of reciprocal relations, and the state department of our government will find no objection from lake vessel interests if a great deal in the way of towing privileges and even some features of the coasting laws are relinquished for a settlement of the wrecking question.

IN CONNECTION with a Christmas editorial it wouldn't be very riduculous to synonomize the work ot the waterway's convention, held at Detroit recently, with the knitting of a Christmas stocking for the Great Lakes. Ex-Senator Palmer set the needles and told the delegates the number of stitches to take on each needle. Every delegation had different yarn of local manufacture but they were not allowed to use any but 20-21-foot channel yarn. Who rounded off the toe? Nobody. The toe was left open because if Santa Claus Congress puts the three and one third millions necessary for the 21-foot channel into the stocking it will not stay there but fall right through, benefitting the whole United States in cheapened transportation. The ship builders of the lakes have stockings comfortably filled with contracts and owners can afford to make a few presents from their 14 to 20 per cent. earnings for the past season. Some captains and engineers will be presented with new boats and machinery now building in ship yards and engine works, and all together can rest with the assurance that next season will be a good one. This prediction is presented to our readers with best wishes for a happy Christmas.

GENERAL Poe is quoted as saying vessels engaged in the Lake Superior trade would undoubtedly have carried 1,000,000 tons additional freight during the past season if the draft of water in the canal and other shallow places had been equal to that of previous years. The water level records show that the mean depth in 1889 was 15.14 feet, in 1890 15.06 feet and in 1891 14.42 feet. The difference in water levels does not seem great but Gen. Poe's estimate of the loss to shipping on account of this difference will serve to show the importance to the entire country of an increase from 15 to 20 feet of water in the connecting channels of the lakes.

SENATOR Gray has again introduced a bill in Congress for the transfer of the revenue marine from the treasury department to the navy. With leading commercial bodies in all parts of the country favoring the change it seems strange that Senator Sherman should hold out against it. Only a few days ago the Cleveland board of trade adopted resolutions in favor of the transfer, and other business organizations of cities on Lake Erie will undoubtedly follow this example, although the measure was talked to death for some unknown reason by Ohio's leading statesman in the last Congress.

Under the head of miscellaneous Gen. Casey, chief of the engineer corps, recommends to Congress that the appropriation for the survey of the lakes be increased from $12,000 to $53,000 and gives the following reason for it: "This increased appropriation is asked for in order that certain special areas may be reexamined for the benefit of the enormous commerce now upon the lakes. The draught and size of vessels carrying the commerce has considerably increased in the past few years, and will again be increased when the new lock in St. Mary's river, now under construction is completed. Localities deemed perfectly safe for navigation when the maximum draft of vessels was 12 feet, are regarded with suspicion when the draft is one-half or more greater. Consequently certain special re-examinations should be made."

Steel Tug Schenck.

The tug S. C. Schenck, without doubt the most perfect boat of her class on the chain of lakes, was built by the Union Dry Dock Company of Buffalo last year. She was built of steel, is 100 feet over all, 20½ feet breadth of beam, draught 12 feet. She has fore and aft compound engine built by H. G. Trout of Buffalo ; size of cylinders 20 x 40x30, with Worthington independent condenser. All other pumps run independent of the engine. The engine turns a Trout wheel 9 feet in diameter and 12½ feet pitch 140 turns running light and 115 tied up. The boiler is of the marine type and was built by the Lake Erie Boiler Works of Buffalo, 9½ feet diameter and 14 feet long, steam allowed 125 pounds ; has 63 square feet of grate surface with air tight ash pit so arranged as to burn hard coal screenings; has 47 inch fan blower run by small engine 7 x 9 inches stroke, that gives forced blast, making all the steam she can use without the least trouble. She has the Dunham steam steerer. One of the nice features of this boat is that there is no coal smoke to hide the stakes and fill the eyes of the captains of vessels being towed when the wind is ahead. She is owned by S. C. Schenck, Toledo, and in connection with the tugs Butler and Uncle Sam makes up the White Star Tug Line at Toledo.

with the office of Gen. Poe in Detroit for a number of years past, and who is a specialist in this line of engineering work.

Buffalo received by lake during the season just closed 129,193,020 bushels of grain and 6,322,490 bushels of flaxseed. The City elevator alone handled 33,500,000 bushels of grain. The aggregate of receipts was 40,000,000 bushels larger than last year and 24,000,000 bushels larger than during 1880, which held the record up the past season. Receipts of flour were 7,093,340 barrels, also beating the record; last season's were 6,245,580 barrels. Of lumber 262,729,000 feet were received, against 282,251,000 feet in 1890. Iron ore showed 419,890 tons, against 551,940 tons last year, which were the largest on record. Grain shipments by canal were 34,267,000 bushels against 38,218,960 bushels last season. In 1880, when the lake receipts were much smaller than this year's the canal carried 71,690,260 bushels. Coal shipments by lake aggregated 2,436,330 tons against 2,157,810 tons in 1890, and 2,556,270 tons in 1888, the heaviest on record.

Sea Performance of Lake Steamers.

The following figures were computed by W. A. Livingstone of Detroit, Mich., from results of several typical lake steel steamers, equipped with tri-compound engines and having an average speed of from 12 to 13½ miles per hour loaded. They represent the average results obtained while running in open lake, from port to port, under ordinary conditions. It is, perhaps, needless to remark, that on a "picked" trial trip higher efficiencies are obtained. The cargo capacities of the steamers varied from 2,500 to 3,200 tons on 16 feet draught.

Co-efficient of displacement varied from 1.76 to 0.84.

Average co-efficient of displacement 0.81.

Steam used at 155 pounds gauge pressure; rate of expansion of steam 11½ to 13½.

Consumption of fuel per square foot of grate, 14 to 20 pounds per hour.

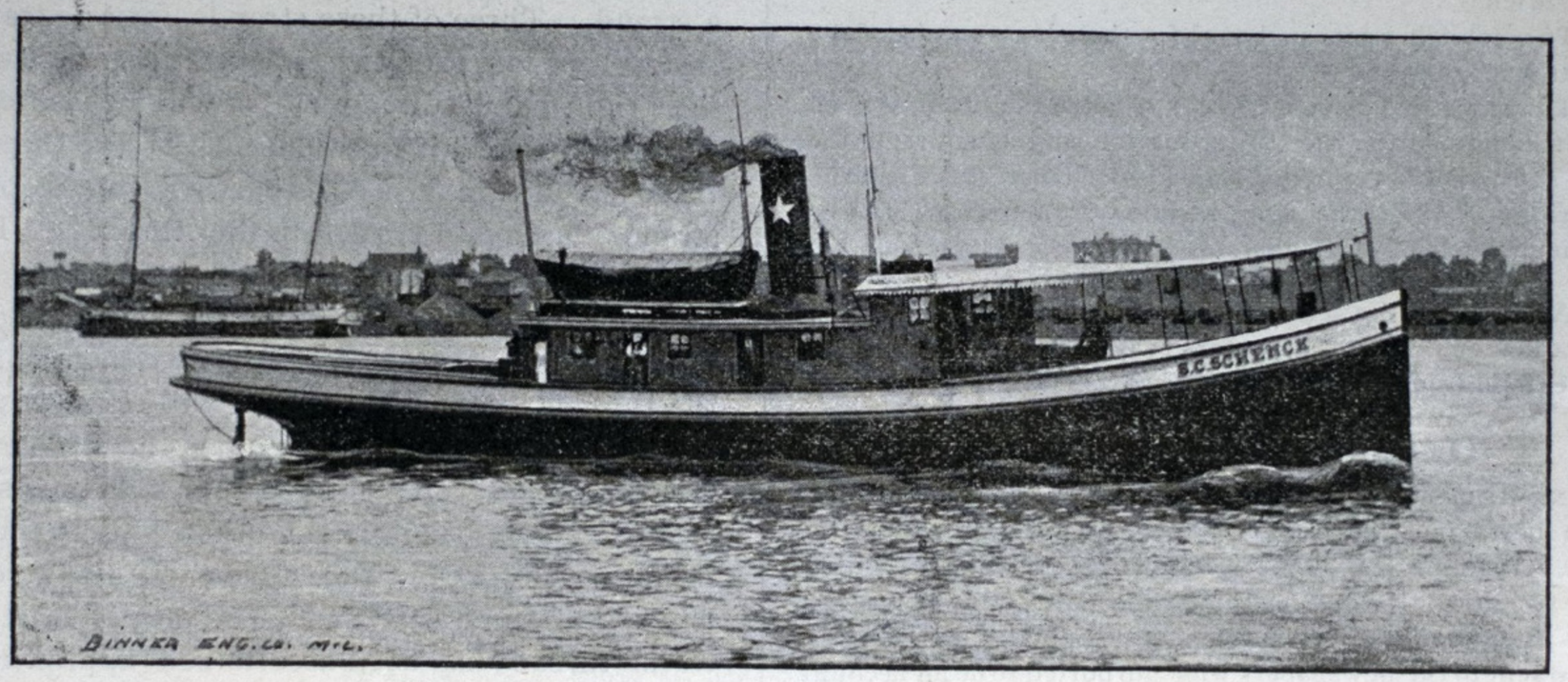
Average consumption of fuel per square foot of grate, 17 pounds per hour.

Average consumption of fuel per I. H. P., 1.95 pounds per hour.

Average consumption of water per I. H. P., 17.1 pounds per hour (partly estimated).

Rate of transportation: One ton of freight carried 100 miles on a consumption of from 5¾ to 8 pounds of fuel. Average consumption, 6¾ pounds fuel.

[NOTE.—Owing to the small dead-rise in the floors of these steamers, their co-efficient of fineness is very little more than their co-efficient of displacement.



Around the Lakes.

Anybody knowing the whereabouts of William Russell, who was on the steamer Lowell this season will oblige by sending a postal to the REVIEW.

John C. Estes, Sandusky vessel owner, died at Glenwood Springs, Col., Sunday. He was born at Cape Vincent, N. Y., and was in his sixty-sixth year.

Clayson's compound is the name of a new crank pin grease that engineers should enquire about Full particulars may be had by writing or calling on the Commercial Oil Co., 17 Main street Buffalo, N. Y.

Geo. C, Hartnell is the engineer in charge of the work of constructing the American Steel Barge Company's dry dock at West Superior. It is expected that the dock, which will require about 1,000,000 feet of timber in its construction, will be ready for service in August next.

Chicago and other Lake Michigan cities are again urging upon Congress the necessity of replacing the old revenue steamer Andy Johnson by a boat of modern design. The Chicago board of trade adopted a resolution with that end in view a few days ago. As the treasury department again recommends that the Johnson on Lake Michigan and the Bibb on Lake Ontario be replaced by new vessels that may readily be equipped for war service, it is more than probable that Congress will see the necessity of making the necessary appropriations.

A very large map showing the connecting channels of the lakes between the St. Mary's Falls canal and the mouth of the Detroit river attracted a great deal of attention at the Detroit waterways convention. All of the shallow places in the rivers where it is proposed to deepen the channels, as well as the government works already completed, were shown in the drawing. It was the work of E. Molitor, who has been connected

A full set of brass signal lamps in McBean, Edge & Co's store, Buffalo, attracted the attention of an old line boat captain who remembered that when side-lights were first used, not so many years ago, he paid as much as the cost of the brass lamps for galvanized lamps, half the size. That was before that company began to make lamps but since they began work they have turned out 1,415 large lights, fourteen sets of brass signal lamps having been manufactured this season.

The Cleveland Wheelbarrow and Manufacturing Company has moved to larger shops equipped with the latest machinery, between (Wason st. and Case ave.) on Hamilton street.

Record of Speed and Big Cargoes.

[*Masters or owners are invited to report improvement on this list.*]

Iron ore: Lake Michigan—Maryland, Inter-Ocean Transportation Company, of Milwaukee, 3,322 gross, or 3,737 net tons, Escanaba to South Chicago,draft 16 feet 6 inches; E. C. Pope, Eddy Bros. of Bay City, 3,239 gross, or 3,628 net tons, Escanaba to Buffalo,draft 16 feet. Lake Superior—E. C. Pope, Eddy Bros. of Bay City, 2,828 gross, or 3,167 net tons, Ashland to Lake Erie, draft 14 feet 6 inches.

Grain: E. C. Pope, Eddy Bros. of Bay City, 125,730 bushels of corn, draft 14 feet 8 inches; Western Reserve, Peter Minch, of Cleveland, 112,431 bushels of wheat, Chicago to Buffalo; W. H. Gilcher, J. C. Gilchrist, of Cleveland. 114,982 bushels of corn, Chicago to Buffalo.

Speed: Owego, Union Line, of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hour; Saranac, Lehigh Valley Line, of Buffalo, Buffalo to Lime-Kilns, 240 miles, 15 hours and 10 minutes, 16 miles an hour.

Fifty Second Congress—First Session.

The following bills of interest to lake vessel owners have been introduced in Congress during the past week:

S. 745, Frye—Admitting to American registry vessels built in the United States and owned by citizens thereof residing abroad, and for other purposes.

S. 1041, Davis—For the construction of a ship canal around Niagara Falls, in the state of New York.

S. 67, Gray—To transfer the revenue cutter service from the treasury department to the navy department.

S. 295, McMillan—To establish wind signal display stations at Thunder bay and Middle islands, Lake Huron.

S. 297, McMillan—To increase the accommodations at the Marine hospital at Detroit, Mich.

S. 743, Frye—To establish a marine board for the advancement of the interests of the merchant marine.

S. 750, Frye—To amend and re-enact SEC. 5 of an act entitled "An act to promote the efficiency of the life saving service and encourage the saving of life from shipwreck," Approved May 4, 1882. (Increase of salary).

S. 755, Stockbridge—To fix the compensation of inspectors of hulls and boilers in the districts of Michigan and Superior at $1,500 each per year.

S. 894, Quay—Authorizing the secretary of war to cause a survey to be mace for a ship canal connecting the waters of Lake Erie and the Ohio, river, the canal to extend from near Erie, Pa., to Pittsburgh, Pa.

Owego—Tuscarora.

EDITOR MARINE REVIEW.—The truth of the old saying, "He who laughs last laughs best," must have struck Capt. McFarlane, master, of steamer Tuscarora, very forcibly upon the occasion of his meeting the Uuion Line flyer, Owego recently. He had for some time claimed for his vessel, the Tuscarora, the proud honor of being the fastest propeller on the lakes, and some weeks ago sent to the newspapers what purported to be an account of a brush between the Tuscarora and Owego, in which the former was the victor. The facts in the case are: The Owego at the time was deep laden, drawing 15 feet 7 inches of water, while the Tuscarora was loaded to but 13feet 10 inches thus enabling him to run the entire rivers without checking the speed of his vessel in the least. Making the rivers also first, he had the advantage throughout. The Owego on the contrarry, was obliged to check until after passing Colchester, and this gave the Tuscarora too great a lead to be easily overtaken. Still with everything in her favor she reached Buffalo but four minutes in advance of the Owego. On Dec. 1, the Owego left Milwaukee over two hours behind the Tuscarora and passed her the following day off Skilagalee. The Owego was not hurried in the least but allowed to jog along at her usual pace, while the Tuscarora was to all appearances crowded to her utmost capacity. With a vessel of her own class she undoubtedly would have made a grand showing, but with the Owego she was simply not in it. By ten o'clock the same evening she had vanished in the darkness astern and became in truth a thing of the past.

U. L.

In a letter to the REVIEW, Conger & Conger, Washington attorneys who give special attention to maritime matters in all parts of the country, say: "We consider your paper the best exponent of lake marine matters, as well as the best edited paper in marine matters covering the great lakes field. It is of very great help to us in keeping us in touch with maritime matters and we read it with interest and pleasure each week. We speak frankly, without attempt to be fulsome."

Only eighty-seven freight boats are laid up in Cleveland as against 111 in the fall of 1890. The carrying capacity of the fleet is 132,700 net tons as against 193,650 net tons in 1890. Buffalo has, of course, secured the great bulk of the lake fleet through the late movement of grain and blockade of grain vessels at that point.

Send 75 cents to the MARINE REVIEW for a binder that will hold 52 numbers.

Facts about Manila Rope.

The fibres of manila rope are composed of very much elongated cells, that look under a microscope like a bundle of pipes. These are of very great strength in the direction of their length, but are weak transversely, as they are not strongly cemented together. To obtain fibres of suitable size for manufacturing rope, the stems are subdivided by machinery, which separates the cells from each other, and leaves the surface of each fibre rough and uneven, somewhat like the surface shown when pine wood is split. When made into rope these rough fibres are compelled in bending over the sheave, to slide on each other while under pressure from the load. This causes the internal chafing and wear which may be seen in opening an old rope. In bending a rope over a sheave, the strands and the yarns of these strands slide a small distance upon each other, causing friction, and wearing the rope internally. Open a wornout rope by untwisting the strands, and a fine powder will be found, showing that when the rope was bent over the sheave, the strands, in sliding on each other, ground some of the fibres to powder. In manufacturing rope, the fibres are first spun into a yarn, this yarn being twisted in a direction called "right hand." From 20 to 80 of these yarns, depending on the size of the rope, are then put together and twisted in the opposite direction, or "left hand," into a strand. Three of these strands, for a 3-strand, or four for a 4-strand rope, are then twisted together, the twist being again in the "right hand" direction. It will be noticed that when the strand is twisted, it untwists each of the threads, and when the three stands are twisted together into rope, it untwists the strands, but again twists up the threads. It is this opposite twist that keeps the rope in its proper form. When a weight is hung on the end of a rope, the tendency is for the rope to untwist, and become longer. In untwisting the rope, it would twist the threads up, and the weight will revolve until the strain of the untwisting strands just equals the strain of the threads being twisted tighter. In making a rope it is impossible to make these strains exactly balance each other. It is this fact that makes it necessary to take out the "turns" in a new rope, that is, untwist it when it is put at work The proper twist that should be put in the threads has been ascertained approximately by long experience. There is, however, a difference in judgment among different makers as to the exact amount that should be used for any specific work. The greater the twist, the more hard and rigid the rope is, and the better it will keep its form, but it is not quite as strong, because the fibres do not lie exactly in the direction of the center line of the rope, but at an angle with it, and the greater the twist the greater is that angle.

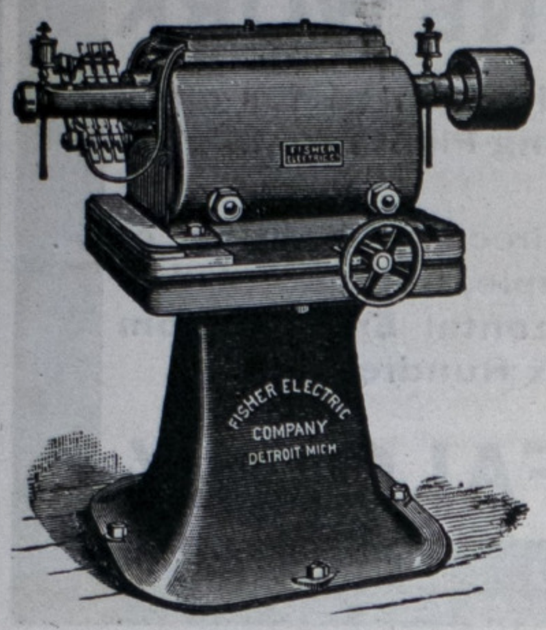
Notice to Mariners.

The light-house board gives notice that during thick or foggy weather hereafter a 10-inch steam whistle will be sounded at Point Betsey light station, Michigan. The characteristics of the signal will be blasts of 5 seconds' duration, seperated by alternate silent intervals of 10 and 40 seconds, thus: Blast 5 seconds, silent interval 10 seconds; blast 5 seconds, silent interval 40 seconds.

The Erie Railway will sell cheap excursion tickets to all stations on the N. Y. P. & O. division, good going Dec. 24, 25, 31 and Jan. 1, and returning until and including Jan. 4. Tickets and other information at 141 Superior street and Central Passenger station, So. Water street and Viaduct.

For the benefit of readers of the REVIEW who are on the lakes over half the year, a special rate of $1 for six month's subscription is made. The paper will be sent to any part of the United States or Canada at this rate and the address may be changed at any time. Order by mail before leaving boat for the winter.

The MARINE REVIEW and the MARINE ENGINEER, London, one year for $4. Write the MARINE REVIEW.



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BUFFALO N Y November 11. 1891.

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Dear Sirs,-

It affords me pleasure to state that the five plants which were installed by your Company on five of our Steamers have given most satisfactory results,both as to the efficiency of lighting and economy in operation

Yours truly,
John Gordon
Gen'l Manager

The most interesting opinion on electric lighting of passenger steamers will occupy the above space next week. It also contains a very pronounced statement concerning the expense of one plant as compared with another.

FISHER ELECTRIC CO.

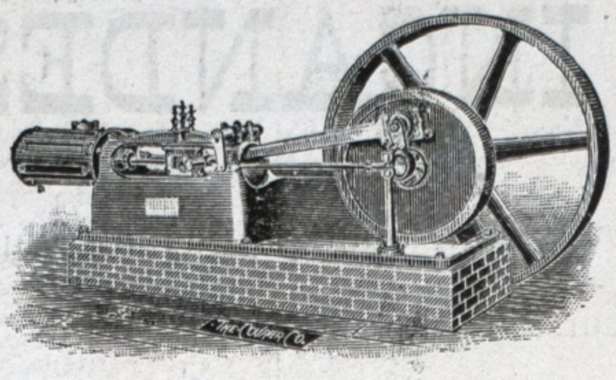
183, 185 & 187 Larned St., DETROIT, MICH.

(For engines operating these plants, see over.)

ELECTRIC LIGHT ENGINES for MARINE WORK

These are the Engines used with all the Electric Light Plants advertised on preceding page by THE FISHER ELECTRIC CO. of Detroit.

Over 25 lake boats fitted out between Jan. 1 and June 1, '91.



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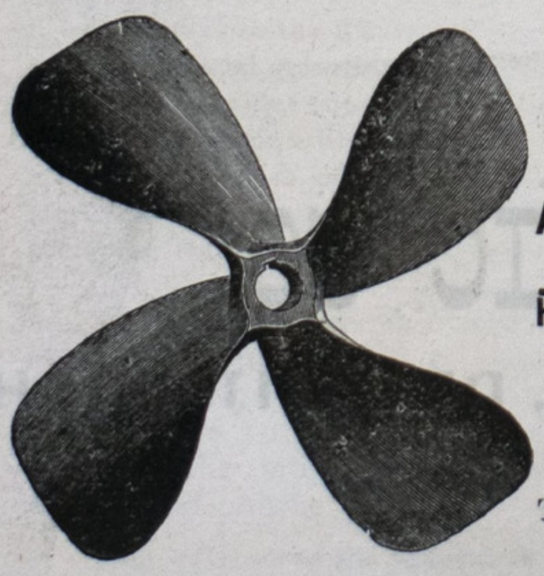

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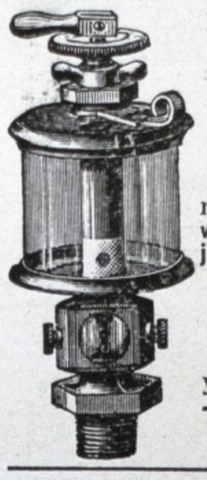

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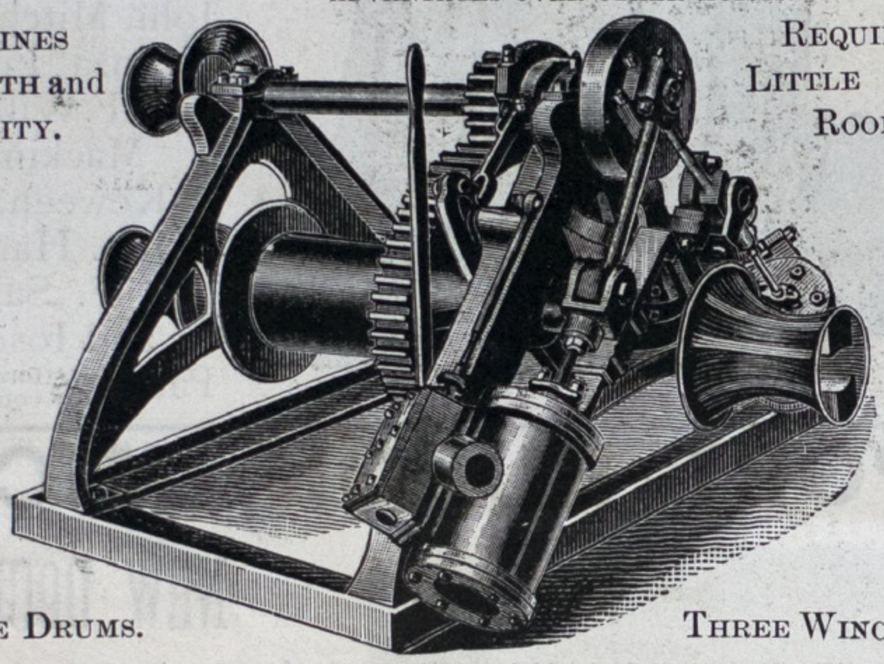

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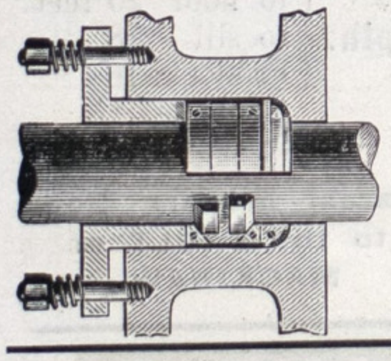

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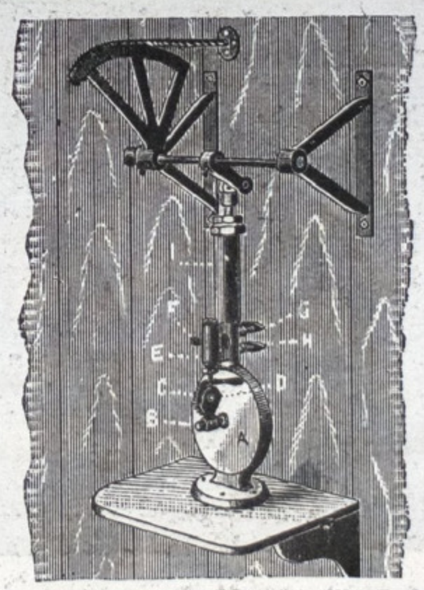

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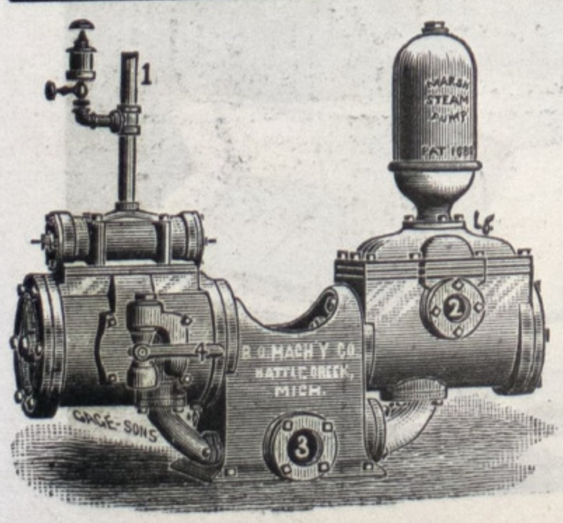

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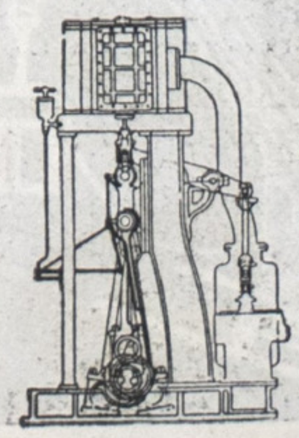

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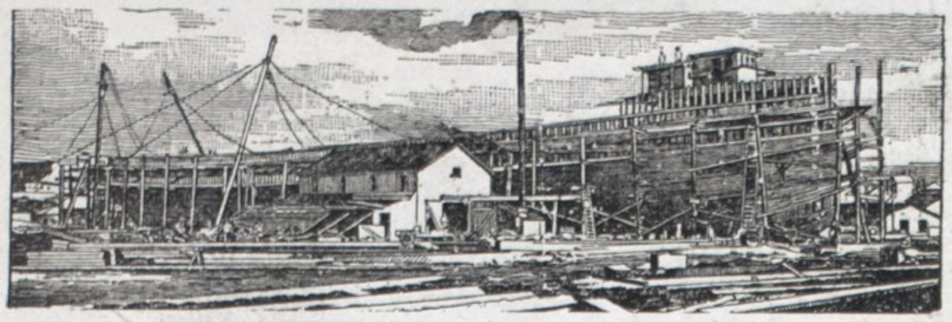

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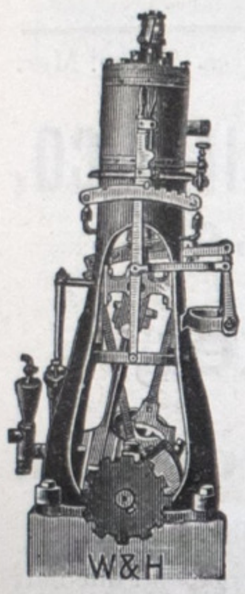

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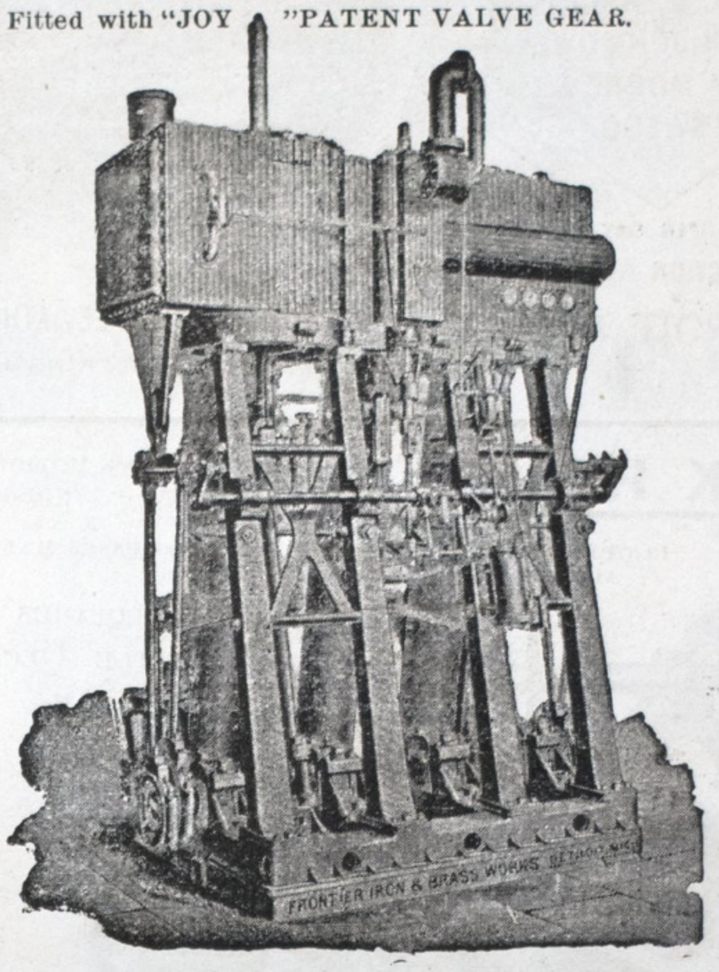

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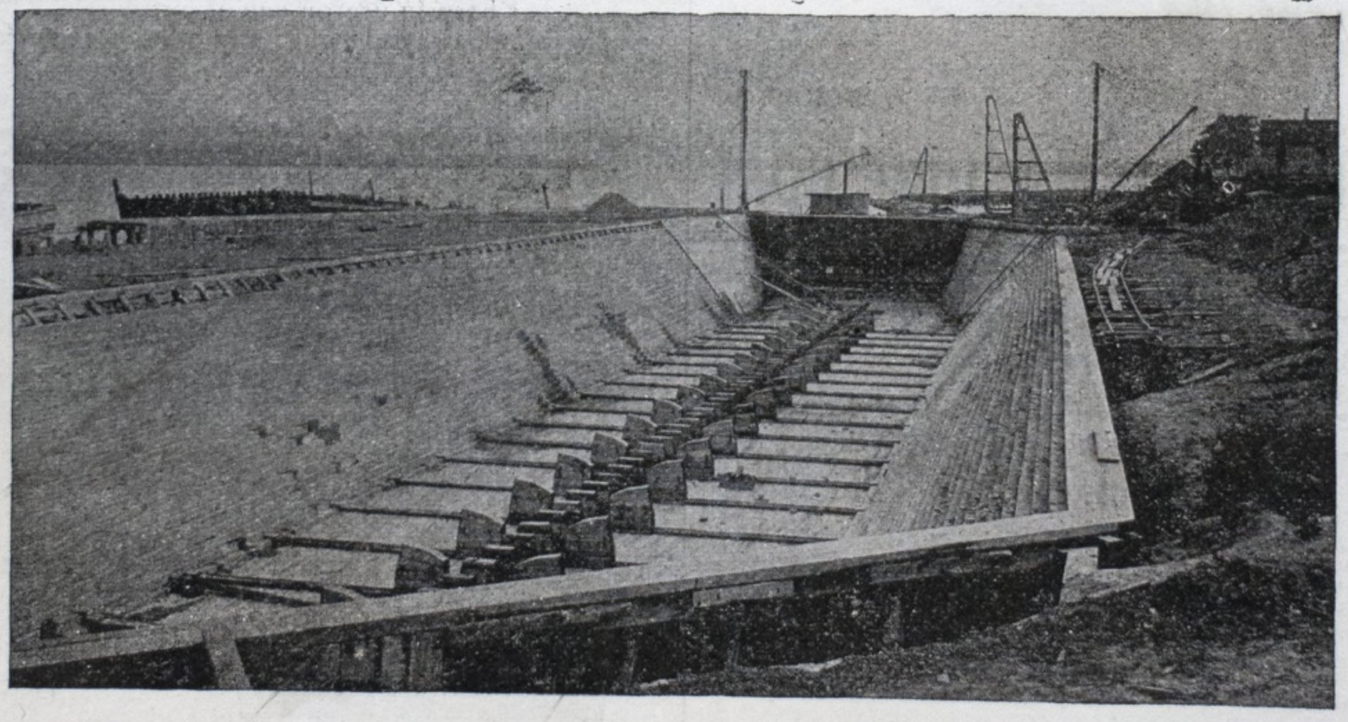

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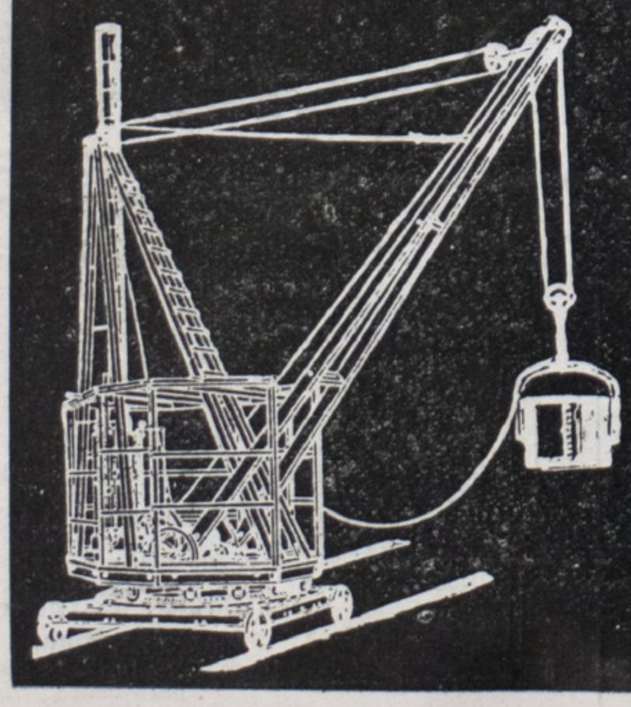

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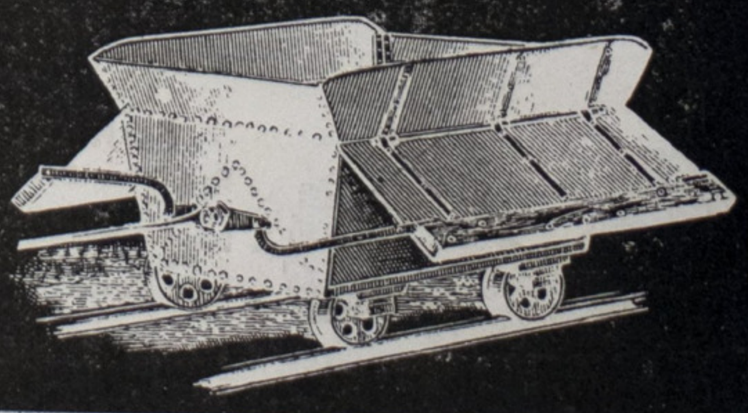
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